DRISI

Caltrans Division of Research, Innovation and System Information

Research Results

Improving Public Transit Facilities to Increase Use

Online survey tool helps agencies improve passenger transit trips from beginning to end

Modal

JUNE 2013

Project Title:
Tool Development to Evaluate the Performance of Intermodal Connectivity (EPIC) to Improve Public Transportation

Task Number: 1230
Completion Date: March 31, 2012

This project provided transit agencies with an online tool to learn about users' experiences at transit stops and stations to prioritize improvements and maintain and increase ridership.

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WHAT WAS THE NEED?

Travel by public transit encompasses more than just riding on a bus or train. A typical door-to-door trip includes getting to the bus stop or train station, waiting for the vehicle to arrive, boarding, traveling in the vehicle, and then getting off and walking to the final destination. In many cases, the trip involves transfers, which can entail walking to another stop and waiting.

With a significant amount of time spent walking and waiting, the quality of services at transfer facilities contributes to how riders perceive the transit system. Research has shown that transit users find the out-of-vehicle experience of waiting and transferring to be more burdensome than that of riding in the vehicle. Inadequate shelters, safety concerns, long waits, and the lack of schedule information can discourage travelers from using public transportation. Yet, despite the importance of the out-of-vehicle portion, transit providers have paid more attention to the in-vehicle travel experience. Little is known about how the factors of station design and other intermodal transit amenities influence the user's experience.

WHAT WAS OUR GOAL?

This multiphased project focused on the out-of-vehicle segments of transit travel and ways to reduce the burdens of walking, waiting, and transferring. This phase developed an online tool that transit agencies can use to identify and evaluate the factors most important to riders to improve the convenience and attractiveness of public transportation.

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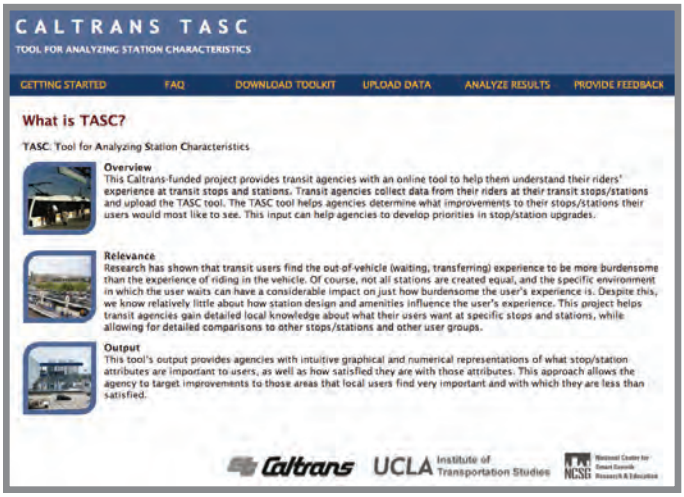
WHAT DID WE DO?

Caltrans, in partnership with the University of California, Los Angeles Institute of Transportation Studies, expanded the study conducted in the earlier phases of this project to gather more statistical variation. The researchers had initially surveyed 700 transit users to assess riders' perceptions and satisfaction level of walking and waiting at transfer facilities.

To broaden the survey and bring the benefits to a wider audience, the team developed TASC—Tool for Analyzing Station Characteristics. The TASC website allows agencies to collect their own data and upload it, thereby increasing the sample size and adding to the robustness of the data at no increase in cost to the research effort.

TASC gathers data to identify the factors that influence riders to help agencies address the following questions to improve the experience of transit users and increase ridership:

- What are the best ways to reduce out-of-vehicle travel burdens?
- Are some approaches to improving the interconnectivity among transit lines, modes, and systems more cost effective than others?
- Can improvements be made in a stand-alone fashion or must they be implemented in concert with other improvements?
- Do different types of travelers perceive the burdens of walking, waiting, and transferring differently?



Agencies can collect ridership survey data and upload it to TASC to broaden the research effort.

WHAT WAS THE OUTCOME?

TASC helps transit agencies obtain rider responses to help make cost-effective investment decisions for individual transfer facilities or across their entire system. The TASC website does not require technical expertise or knowledge in programming or survey methodology. The tool has a relatively low learning curve and guides users to what they need.

Transit agencies can enter their data using a standardized form and upload it to the central database. The tool is designed to prevent users from inadvertently uploading invalid data, such as duplicate records or incomplete data. The output provides intuitive graphical and numerical representations of which attributes are important to users and how satisfied they are. The agency can then prioritize and target improvements to those areas that local users find important and with which they are less than satisfied.

WHAT IS THE BENEFIT?

This research addresses an overlooked aspect of the transit experience. User input about the quality of transit stops and stations identifies the features and attributes that discourage riders. With better knowledge of what negatively impacts ridership, the limited funding for transit can be put to best use. In addition, enhancing the transfer process could attract current private vehicle drivers to use transit, thereby reducing congestion and improving air quality. Boosting ridership can bring increased revenues for transit operators. This research also offers valuable information for planning and designing new facilities and modifying existing transit stops and stations.

LEARN MORE

To view the complete report:
www.dot.ca.gov/research/researchreports/reports/2012/2012-08_task_1230_modal.pdf

To view the TASC website, visit:
www.its.ucla.edu/TASC